MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2016/2017

TCS2251 – COMPUTER SECURITY

(All Sections / Groups)

2 JUNE 2017
3:00 PM - 5:00 PM
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Sample Solution paper consists of 5 pages (including cover page) with 6 Questions only.

2. Attempt **ALL** questions. The distribution of the marks for each question is given. This paper carries **60 marks**.

3. Please print all your answers in the Answer Booklet provided.

Question 1 (10 Marks)

a) Define the process of program or data 'Relocation' in a computer memory. [2 marks]

b) List FIVE(5) examples of protected objects or resources in an operating system. [5 marks]

c) Identify THREE (3) conditions which should exist for a malicious attack to take place. [3 marks]

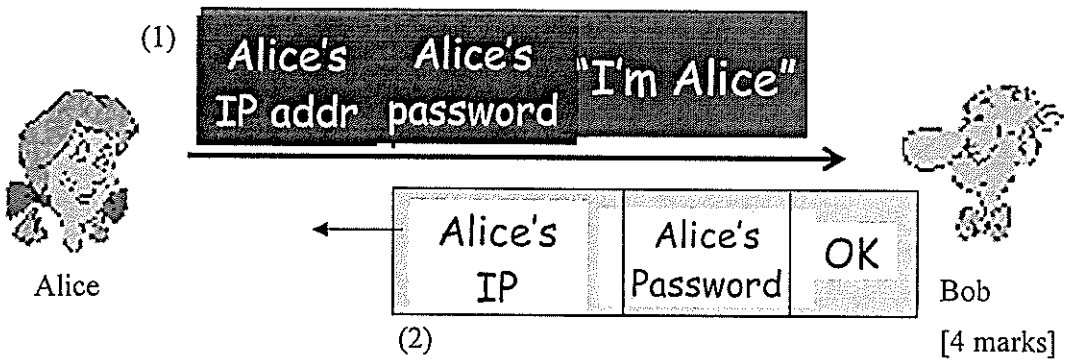
[TOTAL = 2 + 5 + 3 = 10]

Question 2 (10 Marks)

a) What is the origin of program flaws? [2 marks]

b) Briefly explain FOUR (4) inadvertent flaws related to data which can be found in a database computing environment. [4 marks]

c) The following authentication scenario can be used on a network. Interpret the diagram and summarize the scenario. Explain how this scenario can be a failure in the authentication process.



[4 marks]

[TOTAL = 2 + 4 + 4 = 10]

Continued ...

Question 3 (10 Marks)

a) Decrypt and construct the following sentence using Caesar cipher where $P_i = C_i - 7$.

"H YVZL IF HUF VAOLY UHTL DPSS ZTLSS HZ ZDLLA"

In your answer, copy the following table to show how you did your decryption.

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z

[3 marks]

b) Apply your knowledge to interpret the meaning of the following UNIX command for access control of a file:

Chmod 4755

What are the restrictions set for the user, group and owner of the file? [4 marks]

c) Encrypt the following phrase using the 5-column transposition cipher.

"WHAT A WONDERFUL WORLD"

In your answer, show how you did your encryption. [3 marks]

[TOTAL = 3 + 4 + 3 = 10]

Continued ...

Question 4 (10 Marks)

a) Name and explain TWO (2) additional-data techniques used by DBMS to detect and fix inconsistent data. [4 marks]

b) Explain the attack mechanism of SYN Flooding in achieving denial of service. [4 marks]

c) In databases, a high-level user is prohibited to write on a lower-level data element. Do you agree on this statement? Justify your answer. [2 marks]

[TOTAL = 4 + 4 + 2 = 10]

Question 5 (10 Marks)

a) Explain the process of establishing an encrypted SSL session between a browser and a server. You may use a diagram to illustrate your answer [4 marks]

b) You are a system administrator and you are planning a backup site for your company. You are informed that the plan will be fully support financially and the requirement is to enable the business to resume the next day even when natural disaster happens. Decide whether you should setup a Hot Backup Site or a Cold Backup Site. [4 marks]

c) Referring to the situation in the question above, do you think onsite backup is better than offsite backup? Justify you answer. [2 marks]

[TOTAL = 4 + 4 + 2 = 10]

Continued ...

Question 6 (10 Marks)

a) It is hard to quantify security as it depends how the management views it. Explain in brief how can security be quantified? [3 marks]

b) Define and give an example each for the TWO (2) forms of Teleological theory. [3 marks]

c) Compare and contrast among Copyright, Patent and Trade Secret. [4 marks]

[TOTAL = 3 + 3 + 4 = 10]

END OF EXAM PAPER